

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 09/726,629
Filing Date: November 30, 2000
Title: SOLDERLESS ELECTRONICS PACKAGING (As Amended)
Assignee: Intel Corporation

Page 2
Dkt: 884.341US1 (INTEL)

IN THE SPECIFICATION

Please make the paragraph substitutions indicated below. The specific changes incorporated in the substitute paragraphs are shown in the following marked-up versions of the original paragraphs.

The paragraph beginning on page 10, line 22 is amended as follows:

The known CIN::APSE connection system differs in several significant respects from connector 120. First, the CIN::APSE connection system incorporates a socket fixture on the order of several millimeters in thickness between the IC die and the substrate. By contrast, the inventive subject matter does not incorporate a socket fixture, so the thickness of support 121 of connector 120 can range from a few tenths of a millimeter down to .05 mm and possibly thinner. In an embodiment, support 121 is of relatively uniform thickness, and it has upper and lower sides.

The paragraph beginning on page 14, line 1 is amended as follows:

ECEs 164 can be of any suitable shape, size, number, location, orientation, and composition. In one embodiment, ECEs 164 are tiny crystals of a crystalline substance, such as a salt. In another embodiment, ECEs 164 are relatively non-compressible particles of irregular, non-cylindrical shape, such as pieces of silicon, glass, quartz, diamond, and so forth. In yet another embodiment, ECEs 164 are relatively non-compressible particles of conducting metal or metal alloy from the group consisting of aluminum, antimony, beryllium, bismuth, cadmium, carbon, chromium, copper, gold, iron, lead, magnesium, manganese, molybdenum, nickel, palladium, platinum, silicon, silver, tin, titanium, tungsten, and zinc. ECEs 164 could also be formed from a metal silicide or doped polysilicon. In another embodiment, ECEs 164 comprise small, compressible spheres formed, for example, of a polymer or other plastic.

The paragraph beginning on page 14, line 16 is amended as follows:

ECEs 164 can comprise regular geometric objects, such as spheres, ovaloids, cubes, parallelepipeds, cylinders, hourglasses, back-to-back cones, and the like. ECEs 164 can also

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/726,629

Filing Date: November 30, 2000

Title: SOLDERLESS ELECTRONICS PACKAGING (As Amended)

Assignee: Intel Corporation

Page 3

Dkt: 884.341US1 (INTEL)

comprise irregular, non-cylindrical geometric objects, such as blobs, lumps, broken or crushed particles, and other irregular forms.

The paragraph beginning on page 14, line 23 is amended as follows:

FIG. 12 illustrates a cross-sectional representation of the connector 160 of FIG. 11 taken along line 165 of FIG. 11. ECEs 164 of irregular geometry are held within support 161. ECEs 164 extend between the upper and lower sides of support 161, and they project slightly from both surfaces of support 161. In an embodiment, ECEs 164 have a dimension equal to or exceeding the thickness of the flexible support 161. In one embodiment, the outward projections of ECEs 164 have relatively sharp tips to enable ECEs 164 to slightly penetrate lands 102/103 on die 100 (FIG. 8) and lands 112/113 on substrate 110 (FIG. 8) when the stack is compressed together by IHS 132 (FIG. 8).